

MICHAEL CHESTER & PARTNERS Consulting Civil and Structural Engineers

8 Hale Lane London NW7 3NX tel 020 8959 9119 fax 020 8959 9662
mail@michaelchester.co.uk

DESIGN AND ACCESS STATEMENT

24 PARK VILLAGE EAST NW1 7PZ

Our ref: 13100

The subject property is an Edwardian semi detached villa on lower ground, upper ground and first floors and is Grade 2 listed.

It is suffering from subsidence due to a combination of the following trees extracting sufficient moisture from the shrinkable clay subsoils to cause them to shrink:

Large Ash – in garden of No 26

3 Large Planes – in rear garden No 24

Large Fig – in front garden of No 22

Site investigations by CET have identified root from these trees beneath the house foundations. Soils test results indicate significant desiccation to 3 metres below lower ground floor level.

Subsoils are London Clays but the site is unusual being adjacent to a deep railway cutting at the front and the Cumberland Arm of the Regents Park Canal at the rear which was built in 1816 and in-filled during the Second World War.

A 20 metres deep borehole from upper garden level was made to check whether these features had caused a deep seated problem beneath the apparent zone of desiccation. The only abnormal test result from this borehole was a low shear stress at 7 metres depth. Otherwise results appear typical for London Clays.

We are aware of plans to install a massive diaphragm wall under Park Village East to enable widening and deepening of the railway cutting for HS2. This aspect is of course beyond our control.

From the evident cracking patterns and widths, the predominant movement has been a subsidence induced rotation of the house down towards the left hand neighbours Ash tree. Despite negotiations it has not proved possible to have this huge tree removed. This rotation has caused a 25mm gap to open between the roof and party wall as well as large tapered vertical cracks at the steps in the front and rear elevations. The internal wall running front to rear has also been tilted with a resulting gap caused in its cornices.

Damage is so severe and continuing that underpinning is now warranted.

A scheme of traditional underpinning has been considered but at 3 metres deep is at the limits of what can safely be constructed and would have to be abandoned if greater depth proved necessary. A piled raft underpinning scheme has therefore been chosen to get well beyond the potential influences of the trees.

Part of the front and all of the flank wall of the lower ground floor are retaining about 2 metres of garden. A temporary trench will be dug to relieve lateral ground pressure from these walls so that they may be safely underpinned and new retaining walls constructed behind them to resist potential Clay expansion forces. The other garden retaining walls will be jointed from the underpinned retaining walls.

Superstructure repairs have been scheduled using traditional brick stitching methods with 1:1:6 cement:lime:sand mortar. Stainless steel helibars will be inserted where relevant using cementitious grout to maintain flexibility and impart some flexible strength across repairs.

Provision is made in the repairs schedule to repair internal plasters with lime plaster where such still exists and to make trial panels to match external renders using 1:1:6 cement:lime:sand render. Stainless

expanded metal lathing will be screwed across masonry repairs to control shrinkage of the finishes to be applied over the repairs.

The existing solid lower ground floor will be replaced with screeded floors over insulation to comply with Building Regulations. Floor finishes are mainly parquet and will be replaced with traditional parquet bedded in bitumen.

The existing pedestrian and vehicular access to the garden will be utilised for the works. It is likely that a skips and Contractors vehicles need to take up some of the Resident Parking outside the house.

Michael Chester
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